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# The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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### VOLUME V.

This number of the REVIEW begins volume five, has four additional pages, making twenty-eight pages in all, and has a variety of educational matter that our readers will appreciate.

Four years ago when the REVIEW was started it was received with warm approval by the teachers of the Atlantic Provinces. It has grown steadily in favor and is becoming more and more the organ of educational opinion for these provinces. We have aimed to make its monthly visits welcome and profitable. "I have come to regard the REVIEW as one of my best friends," says a correspondent. We hope this has been the experience of many others.

The REVIEW has never yet reached that degree of excellence which its founders planned for it. But we believe that it is beginning to accomplish some of the purposes for which it was established: To bring about a closer sympathy among educational workers in the Atlantic Provinces; to keep our readers in touch with the current of educational thought here and elsewhere; to encourage a broader and more

liberal culture for our teachers and schools; to aim at securing greater permanency and a more liberal compensation for teachers; to encourage better methods in the school-room, especially in English literature and natural science; to stimulate to greater activity the dormant, and encourage the earnest and successful workers to fresh effort. We know that we have succeeded to some extent from the testimony of many valued friends, from the steady growth of the REVIEW and from the constantly widening circle of its readers.

Our aim has not been to supply "helps" in the shape of ready-made lessons for the machine teacher, but to stimulate to the acquirement of practical knowledge and to aid in simplifying and condensing such knowledge. To make the REVIEW still more useful to its readers, we earnestly invite those teachers who have been successful in the work to give their methods in brief, plain statements. We do not ask for lengthy communications, but short, practical plans of experimental work which they have found to be successful. With such helpers and with the additions that have been made to the staff of writers for the present year, we hope the fifth volume of the REVIEW will far surpass any previous year.

In future all business communications, payment of subscriptions, change of address, from Nova Scotia and Newfoundland, should be addressed to W. T. KENNEDY, County Academy, Halifax, N. S., who from this date is the Business Editor of the REVIEW for Nova Scotia and Newfoundland. Literary communications and editorial news from these two provinces should be addressed to A. H. MacKay, Halifax. Mr. Kennedy, we are assured, will prove an energetic manager and will increase the influence of the REVIEW in Nova Scotia and Newfoundland.

No other change is made for the present in the management of the REVIEW except the withdrawal of Dr. Anderson from the editorship for P. E. Island. The retirement of Dr. Anderson is a matter of regret to us, as the zeal and ability which always characterize his educational work made him an invaluable ally.

## EDITORIAL NOTES.

ONE of the great leaders of men has fallen, and the Dominion is mourning the loss of the premier who has guided its destinies for twenty years of the twenty-four that have elapsed since confederation. It is already proposed to erect a monument at Ottawa to his memory. An appropriate and enduring monument would be the establishment of a fund providing, for each provincial university, a chair in modern history, with special reference to the history and growth of Canada, with which the name of Sir John A. Macdonald has been so intimately associated.

ARBOR DAY was observed very generally throughout the Atlantic Provinces this year — more generally, we hope, than any previous season. The ceremony of raising school flags for the first time was an interesting feature of the day at Moncton, Milltown and other places.

WE hope that all trustees and others who are interested in the extension of the summer holidays will not fail to impress it upon the powers that be at every opportunity. There is a general feeling in all quarters in its favor, and it would be a most popular move on the part of the Board of Education.

AFTER having planted trees on Arbor Day, what then? We know of school grounds where the flowers and trees set out are carefully watered each day by the pupils. This is a necessity in the dry weather we have had since Arbor Day.

A BILL has been introduced into the English House of Commons which provides for the free education of children of the elementary schools between the age of five and fourteen years.

SEVERAL interesting articles on primary education received too late for this number will appear in the July number, which will be issued early in the month.

DURING the past two years the August number of the REVIEW has been issued with September as a double number. This year our subscribers may look for the REVIEW both in August and September.

THOSE attending the Summer Science School at Antigonish, opening July 27th, should remember to take a "standard" certificate of having bought a first-class ticket to Antigonish from the agent at his starting station. It is *this* certificate which, when completed by the secretary of the school, enables the holder to return at the reduced rate on the Intercolonial Railway.

THE advertising pages of this number of the REVIEW contain much matter that our readers will do well to look over with attention. The REVIEW can point with pride to the fact that the leading educational institutions, publishers, manufacturers of school furniture and prominent business men have found it an advantageous medium by which to reach teachers and boards of trustees. Our readers will find, by consulting the pages of this number, that those who value such an advertising medium are on the increase.

THE interesting lecture On the Early History of New Brunswick, by Moses H. Perley, is brought to a close in this number of the REVIEW. A few copies of the lecture will be issued shortly in pamphlet form for the convenience of those who may wish to preserve the lecture in a more compact form. Our readers are greatly indebted to Mr. W. F. Ganong for presenting this important sketch of our early history, with the interesting notes which he has appended.

OUR READERS who intend to be present at the great educational gathering at Toronto in July will do well to consult the advertisement of the Grand Trunk Railway in another column. Of course, one great object of the Lower Province teachers in attending the Convention is to take in as many points of interest in Upper Canada as possible. The Grand Trunk Railway and its steamer connections will allow tourists to see the great St. Lawrence, the cities of Montreal and Quebec, and to return either by the Intercolonial or by steamer from Quebec to Charlottetown and Pictou. Arrangements may yet be made for those who wish to attend the American Institute of Instruction at Bethlehem, N. H., which meets July 6th, but at the hour of going to press they have not been announced.

MANY local licenses have had to be granted throughout the Province of New Brunswick during the present term, and notwithstanding the large number of teachers who are graduating from the normal school in June, it is expected that the supply even then will barely equal the demand. The time seems opportune for those teachers who have not been receiving a fair equivalent for their services to look for an increase of salary. We do not mean by seeking another district, which often means interfering with some other deserving teacher, but by using all legitimate means to induce trustees to grant an increase. It is not by striking that teachers will materially advance their interest, but by such conscientious discharge of their duties as will render

their services more highly appreciated. Last year shows an increase in teachers' salaries in this Province — small, it is true, but still in the right direction. The granting of local licenses has not hitherto been regarded as having a tendency to keep up salaries, as trustees are often very partial to making the lowest salary paid the standard for the future. At present no district that employs a local licensed teacher can receive poor aid. This is a grand provision, as it makes the licensed teacher the more desirable even in the matter of salary, which, it is to be regretted, is still the moving power in too many districts. We believe that at no time since the school law has the prospect for improved salaries been better, always providing that the teacher be deserving.

WE have recently been told of a most interesting old etching relating to New Brunswick. It belongs to Mr. W. F. Ganong, of Cambridge, Mass., who, hearing of its existence in Pennsylvania, has managed to secure it. It is doubtless the oldest engraved and published view in existence of any settlement in New Brunswick. Champlain's woodcut of the St. Croix Island settlement of 1604, published at Paris in 1613 is hardly an exception, since Dohet Island, on which the settlement was built, now belongs to Maine. The etching in question is entitled *A View of Miramichi, a French Settlement in the Gulf of St. Laurence, destroyed by Brigadier Murray detached by General Wolfe for that purpose, from the Bay of Gaspé*. Drawn on the spot by Capt. Harvey Smyth, etch'd by Paul Sandby. Retouched by P. Benazech, London, printed for John Bowles, etc.

The italicized title is repeated in French. It was published in 1768, but as the destruction of the French village took place in 1758 the drawing must have been made in that year. This view is one of a series of five, the other four relating to Quebec. It appears to be extremely rare, as Mr. Ganong has been able to learn of the existence of but one other copy. The engraving is in size 13 by 20 inches and is a most beautiful example of copperplate work. Even aside from its very interesting local associations, and even if engraved at the present day, it would at once attract attention for its beauty, both of execution and subject. It shows the Miramichi winding away in the distance between its wooded banks; the French settlement of half a dozen houses stands in a clearing on the left, near which projects a point bearing at its end a huge cross. In the foreground is a British sloop full of soldiers, and several boats are landing soldiers for the attack on the settlement. Altogether the view is of very great interest. Have any of our readers seen it?

#### A NEW DEPARTURE.

The prospectus of the faculty of pure and applied science of Dalhousie University, to the organization of which we have already referred, has been issued, and the university is to be congratulated on having taken a number of very important steps in advance. No new chairs have been founded, but through the co-operation of Principal A. H. MacKay, Dr. M. Murphy, Provincial Engineer, E. Gilpin, Esq., Inspector of Mines, and F. W. W. Doane, C. E., who, with commendable public spirit, have undertaken to lecture on zoology, civil engineering, mining and surveying respectively, and by the recognition of the drawing classes of the Victoria School of Art and Design and the physiology and anatomy classes of the Halifax Medical College, a number of excellent courses in pure and applied science have been organized. We merely mention the courses in mathematics and mathematical physics and in experimental physics and chemistry, intended for students who wish to prepare themselves for higher teaching positions in these departments; the course in chemistry and biology, intended for students who are to enter upon the study of medicine, and admirably suited to its end; and the courses in civil, mechanical and mining engineering, which seem to be as complete and thorough as they can be without workshops or testing laboratories. But we must refer at greater length to an entirely new course intended to prepare students for science masterships in our high schools. This course includes the following subjects: English, French, German, mental science, drawing, mathematics, physics, chemistry, mineralogy and lithology, botany, zoology and physiology. The study of the literary subjects and of mathematics and physics extends over two years, that of drawing and chemistry over three. Physics and chemistry are studied both systematically 'by lectures and practically with laboratory, and part of the laboratory work will consist of practice—in the making of apparatus to illustrate lessons. In the botany class instruction will be given in the use of the microscope, and the zoology class will devote the greater part of its time to the dissection of typical animals. Thus the scientific study will be practical throughout. The drawing course is very thorough, including freehand and geometrical drawing, shaded drawing from the round, modelling in clay, decorative design, the element of perspective and the history of art.

This course seems to us to be exactly what science masters in our high schools ought to have studied. The only important omission is geology, instruction in which we hope some friend of the university may

at an early date enable it to supply. Students who have taken such a course ought to be in great demand, not only in our high schools but in all our schools. For a teacher, with the training which it implies, will be able to prepare the great majority of his or her pupils for their life's work in a thoroughly efficient manner.

#### BOTANICAL CLUB OF CANADA.

The Botanical Club of Canada was formed in Montreal May 29th, during the meeting of the Royal Society. Its design is to encourage botanical investigation throughout the Dominion with a view of gaining a more accurate knowledge of its flora; to stimulate workers in every district; and to publish the results of their researches yearly in the Proceedings of the Royal Society. The organization is extremely simple. There are no constitution and bye-laws. Any one who wishes to do practical work in plant study and investigation may be enrolled as a member on the payment of twenty-five cents. A President and Secretary-Treasurer for the Dominion are appointed each year. These officers for this year are Prof. Lawson, Ph.D., Halifax; and A. H. MacKay, B.Sc., Halifax. Secretaries have been appointed for each province, whose duty is to divide their respective provinces into districts, secure the co-operation of all botanical students in beginning a systematic study of the plants of their districts, and in tabulating the results. Where there are no botanists, it is hoped botanists may be made by stimulating the collection of plants, and publishing in local papers lists of those discovered. The lists from each locality should be transmitted to the secretaries for the counties, who shall report to the provincial secretaries, who shall finally report to the Dominion secretary; first, not later than 31st December, giving results of summer's work; and secondly, not later than 15th May, giving an account of the organization, prospects for the next season, with suggestions for the annual meeting in Toronto, 1892, at the time of the meeting of the Royal Society.

The secretaries for each Province are:

Newfoundland—Rev. A. C. Waghorne, St. John's.  
 P. E. Island—F. Bain, Esq., Charlottetown.  
 Nova Scotia—E. J. Lay, Esq., Amherst.  
 New Brunswick—G. U. Hay, Ph. B., St. John.  
 Quebec—Prof. D. P. Penhallow, B. Sc., Montreal.  
 Ontario—Prof. John Macoun, M. A., Ottawa.  
 Manitoba—M. Burman, Winnipeg.  
 Alberta Territory—W. H. Galbraith, Lethbridge.  
 British Columbia—Dr. Newcome, Victoria.

All botanical students and those who wish to begin to work in their respective provinces are invited to correspond with the officers above named, with a view to effecting organization in counties, parishes and districts.

#### N. B. UNIVERSITY.

The Encœnia of the New Brunswick University took place at Fredericton on the 28th ult., and was, as usual, attended by a great number of the friends of that time-honored institution. The degree of M. A. was conferred on Rev. W. O. Raymond, and E. W. McCready, St. John, and Inspector G. W. Mersereau of Northumberland. The alumni oration by Philip Cox, B. Sc., Newcastle, was in admirable spirit, touching upon the necessity of a closer union between the university and the common school system, and the incorporation into our institutions of learning more technical training. Dr. Bailey's address in praise of the founders of the institution was, in the absence of Dr. Bailey, read by Prof. Duff. Dr. Harrison announced that the Senate had appointed Mr. W. K. Hatt to the chair of engineering made vacant by the resignation of Prof. Strong. He also announced that the Senate had voted \$1,000 for the purchase of electrical apparatus.

Lieut.-Governor Tilley presented the Douglas gold medal to Mr. Yorston of Douglastown. In the evening the alumni dinner was held at the Queen Hotel, at which were present graduates of the University from all parts of the Province, members of the government, and many other distinguished visitors.

#### HIGH SCHOOL EXAMINATIONS.

In his annual report for 1890, Inspector Carter says that the trustees of St. Stephen have adopted the matriculation examination of the University of New Brunswick as the standard by which pupils shall pass from their high school, and already one such examination has been held. He also recommended that a similar course be followed by the trustees of St. John, and the plan has been adopted.

Such examinations would only be in harmony with our educational system, of which the university is supposed to be the head and which receives its support from the same sources as the common schools. While this is so, the examinations for matriculation do not entirely harmonize with the requirements of the pupils passing from our high schools.

The amount of classics and mathematics required by the university for matriculation is about the same as that required by our high schools for graduation. In other subjects there is considerable difference, and we are of the opinion that an average of twenty-five per cent. is too low to entitle a pupil to pass from the high schools. We hope, if the matriculation examination of the university is to become the standard of graduation for the high schools, that the requirements of each will be made to accord more nearly.

**ARBOR DAY AT WESTFIELD.**

The following letter has been handed to the REVIEW by Inspector Carter, of St. John. The practical and thorough way in which Arbor Day was celebrated is worthy of note :

WESTFIELD, KINGS CO., DISTRICT No. 2, }  
May 18th, 1891. }

W. S. Carter, Esq., Inspector of Schools:

DEAR SIR,—According to your notification I observed Arbor Day on the 15th. A number of the trees had died or did not seem to be growing nicely, so we had those replaced and others planted. The trees set were nine maples, one poplar, one cedar, one spruce, one birch and one linden tree.

The garden-beds were also prepared and seeds sown. Other seeds sown in boxes will be ready to transplant in a short time. The plants for school-room were brought back, which had been kept during winter by the scholars.

The yard did not require much work as everything was in pretty good order. The walk from road to school room has been gravelled.

I dismissed at 8 o'clock, as we had prepared for an entertainment in connection with Arbor Day, to be held in the hall in the evening. Nearly all of my scholars took part and some other friends assisted.

The opening was a tableau, representing Arbor Day, followed by the song from April number of REVIEW. The boys at back of stage had two large trees arranged, as if planted, and the girls, who were nearly all dressed in white, held bouquets of different kinds of flowers. Above the stage, on wall, was the motto, "Welcome Arbor Day." Other parts of the room were also decorated with wreaths of green.

The songs and recitations were principally on flowers and trees. Several dialogues were included in the entertainment, one a May party, in which they elected and crowned their Queen of May.

We had a large audience, and took up a collection which amounted to \$7. This we intend to spend in books to add to our library.

It was a very tiresome day, but I felt quite satisfied with the result.

From the teacher,

M. HENDERSON.

**SCHOOL LIBRARIES.**

We are gratified to observe the number of school libraries that have been recently established in the Province of New Brunswick. The value and influence of a good school library can hardly be estimated. If well selected it not only cultivates a desire on the part of the pupil for healthy reading, but it as well broadens and imparts culture to the people of the district who are usually as much interested in it as the children themselves. A school library should contain no unreadable book. Works of fiction are not now regarded with the same horror that they were a few years ago, and many of them now find places in the new school libraries. While some novels and books of travel and adventures should be found

on the shelves, care must be taken that nothing of the dime novel stamp or of too sensational a character should be permitted, and also no book containing matter offensive to any class of people in the community. The library should not be purchased entirely in the interests of the most advanced pupils, but something should be provided, if possible, of interest to every grade in the school—from the primary up. There are so many excellent children's books and periodicals in this day that this is quite possible. Most, if not all the libraries that have been thus far procured, have been obtained through the efforts of energetic teachers, assisted by pupils and parents. In these cases the library itself is not the only benefit realized; the effort itself in awakening interest, activity and often self-denial on the part of those engaged in the work always has an excellent influence upon the schools.

**REGULATION 22 — N. B. SCHOOL LAW.****REGULATION 22, 8. — DUTIES OF TEACHERS.**

..... "To see that the school room is ready for the reception of pupils at least twenty minutes before the time fixed for the opening of the school."

This is a very reasonable and necessary regulation. While the teacher's work is arduous the hours are not excessive. All teachers recognize the necessity of being in their rooms before school time to see that these are comfortable by school time, and to check any tendency to disorder and destruction to school property on the part of unruly pupils. The faithful observance of this regulation, as of others, it would be supposed, would be secured by the teacher's oath, and there is no doubt but that on the part of the great majority of teachers it is carefully observed. It has, however, come to the notice of the school authorities of some places that some teachers were neglectful of it, and all of the teachers here have been required to register each morning and noon the time of their arrival at school. The punctual teachers feel aggrieved that they should suffer for the tardiness of others, and humiliated that the required oath is not considered sufficient. Some teachers argue that this exaction is not required in any other walk or business, and where fault is known to exist it is the duty of the principals and schools officers, and part of the ground on which they draw higher salaries, to deal directly with the wrong doers, however unpleasant may be the duty. It seems very derogatory to the dignity of the teaching profession that such local regulations have to be made; and we hope, for the general good, that teachers in those places where they do not now exist will not deserve any like measures.

### THE SENATE OF THE UNIVERSITY.

A Bill has been passed by the Legislature which provides that the Chief Superintendent of Education shall be president of the senate of the university, and which gives the Teachers' Institute of the Province the power of electing one member to that body. The latter provision especially will give satisfaction to the teachers, although it was a mistake to limit the appointment to graduates of the N. B. University.

The Bill also provides that the president of the university shall be its chancellor. This seems rather peculiar. The Hon. Edward Blake is chancellor of Toronto University, which office is usually regarded in his case as honorary. The function of the office of chancellor in other cases is that of final appeal. Either signification, it seems to us, ought not apply to the acting president of a university.

The Bill seems to take the control of the collegiate school out of the hands of the provincial and local authorities and vests it in the senate of the university.

### ADMISSION OF PUPILS TO GRADE I.

Considerable complaint is made each year by teachers and others interested in the welfare and progress of our schools concerning the admission of new pupils to grade I. at other times than the beginning of the year.

Few parents stop to consider the injury done, not only to the school but to the pupil by such a course, and those parents who have children at the school do not seem to be aware that their interests suffer as well. This is due partly to a want of consideration and partly to a lack of explanation on the part of the school boards and their officers.

If a new pupil enters, say in April or May, he usually finds the school filled with those who have had nearly a year's training, and about ready to pass into another grade by examination, a month or two later. In the school there are already, probably two classes—all that the teacher can possibly give attention to—and as the work is chiefly oral at this stage, the constant attention of the teacher is needed.

What is to be done with the new pupils, who must form a third class? Very little can be done with them, and of necessity they cannot receive that attention and employment which is so important to those beginning school. Consequently they contract idle and listless habits, and perhaps a disgust for school. Other pupils are affected, and, to a certain extent, the work of the school becomes deranged.

How can this be avoided? In some towns the school boards fully appreciate the difficulty, and

courteously inform the parents that pupils cannot be admitted until the beginning of the term. When the matter has been explained, and it has been shown to be really for the child's advantage to wait till then, the parent is satisfied. After a few applications the rule becomes established firmly, and few refusals have to be given afterward. In other cases very little effort, if any, is made to prevent pupils from entering, with the results above given.

The probable reason why all school boards do not insist upon new pupils entering at the same time is, that there is a prevalent idea in some quarters, which is often industriously circulated, that it is illegal to prevent a pupil from entering at any time in the term. Be that as it may, we can only say that it has not been demonstrated to be so in this Province of New Brunswick, and where the interests of the schools are so vitally concerned, if there is not local option there should be.

Suppose all school boards exercise a little judicious pressure in this matter. We do not think the result will be a suit at law.

### LANGUAGE AND NATURE LESSONS.

Write the names of useful animals: One quadruped, one fowl, one fish, one insect.

1. Each is useful in what way?
  2. With what is each covered?
  3. How does each go from place to place?
  4. Limbs of each: how many? What called?
- Make a composition of 3 and 4.

Write names of four animals which are neither quadruped, fowl, reptile, fish, nor insect.

1. Which live in shells? Are the shells of one or two pieces?
  2. Which have no feet? Which eight? Which many?
  3. Where is the home of each?
  4. What useful things are afforded by them?
- Make compositions on their homes and habits.

— *From Smith's Studies in Nature.*

Write the names of the different violets you have seen this year.

1. How many petals had each?
2. What was the color of the petals?
3. What other markings had the petals?
4. How many have seen a violet with stem? Without a stem? Which form (stemmed or stemless) is most common?

Write a composition describing a walk in search of violets.

## Astronomical Notes.

## DOUBLE STARS.

J. writes: "I have a good opera-glass, but cannot as yet make satisfactory use of it. Am disappointed that I cannot make out any of the double stars. What is the simplest pair to determine?"

I find there are others in the same fix as J. They probably have one of the many books that give lists of double stars, accompanied by such remarks as these: Rigel, a beautiful and easy object—Gamma Virginis, very easy and fine—Beta Cygni, the finest of the colored pairs for a small instrument—Zeta Herculis, rather difficult for a small instrument—and so forth.

The reader tries his "small instrument," and finds to his disappointment that the "very easy," and "easy," and "rather difficult" ones are all alike "impossible" to him. And then he gets discouraged.

The writers of those books are usually astronomers, men accustomed to use instruments with object-glasses from fifteen to thirty inches in diameter. When they talk about "small instruments," they are thinking—not of field or opera-glasses, but—of telescopes having from three to six inches aperture. Double stars that are easily split by even a three-inch telescope may be quite beyond the reach of the very best field-glass. Nearly all the prettiest doubles—the red and green ones like Antares, and the orange and blue ones like Alpha Herculis—can be reached only by a telescope. And the same is true of the vast interesting doubles, the famous "binary" stars like Gamma Virginis, or Eta Coronæ or 70 Ophiuchi, or Ksi Ursæ Majoris, in which the smaller revolves around the larger, or both around their common centre of gravity. They are either too close together, or the smaller one is too faint to be seen in anything under the grade of a telescope.

How close together a pair must be to be considered a "double" star is a question that I can't answer. So far as I know there is no law to prevent one calling Castor and Pollux a "double" if he so chooses. But that would be stretching the name rather too far. There can be no serious objection, however, to speaking of Mizar and Alcor as a naked-eye double. It was once considered a good test of good eyesight to be able to see these two, but nowadays it must be rather a poor eye that can't pass that test. The distance between them is about one-third of the diameter of the full moon, although to most eyes it does not seem to be so much. The angular measure of the distance is eleven minutes of arc. Another naked-eye double is Alpha Capricorni. Here the two

members of the pair are more nearly of a size, and the distance between them is only six one-fourth minutes, little more half that between Mizar and Alcor. If you put even an opera-glass on this double you will find that it throws the two stars far apart. If your magnifying power were greater, they would be thrown so far apart that they would no longer form an interesting single object. Still more magnifying power would separate them so far that your glass would not take in both of them. From this you may understand why it is that people who have big telescopes take little interest in, and little notice of the kind of doubles that look best in an opera-glass.

For a third specimen let us take Epsilon Lyræ, the famous double-double star. With its double-double character we have nothing to do; that is for the telescope gentry. There are some eyes that can see Epsilon double, but I don't think such eyes are common. The distance is three and a half minutes, a little more than half that of Alpha Capricorni. You could not have a better one to begin opera-glass work with, and I have placed it first in the list below. There are others in the list whose components are further apart, but which you may find more difficulty in doubling. This will be because the smaller one is very faint as compared with the larger. The numbers after the names are the distances. They are given in seconds of arc, so that the three and a half minutes given above for Epsilon Lyræ appears as 207. A relative idea of the distances can be got by comparing them with those already given, which, expressed in seconds, are: Epsilon Lyræ, 207; Alpha Capricorni, 373; Mizar and Alcor, 660; Moon's diameter, 1,800. I have given one (Theta Serpentis) as close as twenty-two, because I have read that a very excellent field-glass will split it; but I have never handled such a field-glass. There are some others in the list that will take a very good field-glass to split them, and that an opera-glass will do nothing with. But then there are lots of others not on the list that may be found for the looking. Try Scorpio, for instance.

Epsilon Lyræ, 207; Beta Capricorni, 205; Zeta and 35 Leonis, 315; Tau Leonis, 95; Alpha Libræ, 229; Alpha Ursæ Majoris, 381; Nu Draconis, 62; Zeta Lyræ, 44; Delta Cephei, 41; 56 Andromedæ, 176; Beta Cygni, 35; Theta Serpentis, 22.

Yarmouth, N. S., June 1, 1891.

A. CAMERON.

A leading teacher of Charlotte County, N. B., says: "Your article on the Metric System of Weights and Measures was to me worth more than three times the subscription to the REVIEW."



### On the Early History of New Brunswick.

BY MOSES H. PERLEY.

A portion of a lecture delivered before the Mechanics' Institute, St. John, in 1841; now for the first time published.

(Continued from May number.)

And here, Ladies and Gentlemen, my Lecture ought properly to cease, but I shall take you a step further without trespassing much longer on your time.

Before this was erected into a separate Province, and while it remained a county of Nova Scotia, a great number of extravagant and improvident grants had been made. Among others Sir Andrew Snape Hammond, at one period Govr. of Nova Scotia, got 100,000 acres on the Hammond River, which took its name from him. Sir John St. Clair got 100,000 acres between the Kennebeckasis and the Washademoac. Our Govr. & Council forthwith set about escheating these large grants, because the conditions of settlement were not complied with, and they acted with such spirit, determination, and high sense of duty, that nearly the whole of the lands so improvidently granted were reverted to the crown, and thus a great barrier to the settlement of the Province was removed, and a field opened to the energy, enterprise & industry of the real settler.

On the 14th Jany. 1785, regulations for the orderly and speedy settlement of New Brunswick were established & published and on the 22nd Feby. following, an order passed for the speedy building and orderly settlement of a Town at St. Ann's point, which it appears Govr. Carleton had visited in person, and selected as the site for a Town and it was ordered to be called Frederick Town after His Royal Highness the Bishop of Osnaburg.

On the 2nd March the ungranted lands on the Miramichi were ordered to be laid out for settlement. In April the following estimate for the civil service of the Province was recd. from Lord Sidney, one of the Principal Secretaries of the State.

Governor.....	£1000
Chief Justice.....	500
Atty Genl.....	150
Secy. Regr. & clerk of Council,	250
Naval officer.....	100
Survey. Gen. ....	150
4 missionaries at £75 each...	300
Agent.....	150
Contigencies.....	500
Total.....	£3100

29th April, 1785, the Atty. Genl. was ordered to prepare a Chapter for incorporating the Towns of Parr and Carleton into a City to be called St. John; that charter we are all well acquainted with, as we have it constantly before us. On the 23rd Aug. 1785 the first grant under the great seal of New Brunswick was passed, and bore the number *one*. It was a grant to Major Menzies of 500 acres of land at Musquash, and is the same property on which Archibald Menzies Esq. now resides.

On the 26th Augt. Col. Allen, Colonel Winslow, Lieut. Dougald Campbell, Lieut. Edw. Steele, and Lieut. Munson Hoyt were appointed Trustees for effecting the speedy Settlement of Fredericton.

In May 1775 Letters Patent under the Great Seal were issued for ascertaining and confirming the boundaries of the several Counties within the Province, & for sub-dividing the same into Towns and Parishes, and in October following writs were issued to the Sheriffs of the Several Counties for a General Election at which every Inhabitant, who had been three months a resident was entitled to vote. The Election proceeded and it appears that there were great riots during its continuance in the City—the Poll was held at Mallards Tavern in King Street, now known as the Bonsall property, and the violent proceedings which took place there were speedily denounced by an order of the Govr. & Council.

On the 9th Jan. 1786 the first Genl. Assembly met in St. John in the old yellow wooden building, opposite the residence of the Honbl. Hugh Johnston, which was pulled down by the Hon. John Robertson last season to erect the new brick house adjoining his own residence.

His Excy. Govr. Carleton, at the opening of the Assembly, made a most excellent speech,—a part of which I must give you. He said:—

“A meeting of the Several Branches of the Legislature for the first time in the New Province, is an event of so great importance, and must prove so conducive to its stability and prosperity, that I feel the highest satisfaction at seeing His Majesty's endeavours to procure the Inhabitants every protection of a free government in so fair a way of being fully successful.

“The preceding winter was necessarily spent in guarding the people against those numerous wants, incident to their peculiar situation; and the summer has been employed, as well in the prosecution of this essential business as in dividing the Province, and establishing the several Offices and Courts of Justice, requisite for the security of the farmer, while engaged in raising a support for his family; and now that the season of the year renders travelling commodious,

and allows you leisure to attend to the public business without interruption to your private affairs, I have called you together, in compliance with the Royal Instructions, that you may put the finishing hand to the arduous task of organizing the Province by re-enacting such of the Nova Scotia laws as are applicable to our situation, and passing such bills as you shall judge best calculated to maintain our rapid advance towards a complete establishment of this country."

After directing the attention of the Legislature to various import objects, His Excellency concludes his speech as follows:—

"The liberality of the British Govt. to the unfortunate Loyalists in general, & the peculiar munificence & parental care of our most Gracious Sovereign to those of them settled in New Brunswick, call loudly for every return that an affectionate and favored people can make, and I am persuaded that you cannot better show you gratitude on this behalf, for the many unexampled instances of National & Royal Bounty, than by promoting Sobriety, Industry, & the practice of Religion—by discouraging all factions and party distinctions amongst us, & inculcating the utmost harmony between the newly arrived Loyalists, and those of His Majesty's Subjects formerly resident in the Province. And, Gentlemen, it is with real pleasure I declare, that our prospects are so favourable, that your exertions for those beneficial purposes can scarcely fail to render this Asylum of Loyalty, the envy of the neighbouring States, & that by exercising the acts of peace, they who have taken refuge here, will not only be abundantly recompensed for their losses, but enabled to enjoy their connection with the parent State, and retain their allegiance to the best of Kings, which their conduct has proved they prize above all other considerations."

Ladies & Gentlemen, I intended to have gone somewhat further with you but the hour warns me, that I have already gone too far. We have now traced this Province thro' all its changes & mutations from the discovery of Cabot in 1497 down to the opening of the first Assembly in 1786—nearly three centuries. We have gone over a great period of time and thro' an immense variety of incident in the brief space allotted to these lectures. I have shown you this city while a wilderness, and while the whole of its shipping (now numbering tens of thousands of tons of as splendid ships as float the ocean) consisted of ONE SINGLE SMALL SCHOONER. Ladies & Gentn. let me conclude by thanking you for your attee. and the great attention with which you have listened to my discourse.

The end of the Lecture.

## ADDITIONAL NOTES.

During the publication of this lecture we have learned from Mr. J. W. Lawrence, who was present when it was delivered, that Mr. Perley used no notes or manuscript whatever, either for this or his many other lectures. This accounts for the irregularities of this manuscript, which was undoubtedly but a series of notes for his own guidance in preparing the lecture. Mr. Lawrence and others describe Mr. Perley as a particularly pleasing and powerful public lecturer.

In two letters written by the late John Quinton of St. John, to the late G. A. Perley, of Fredericton, now in possession of Miss Perley of Fredericton, are some facts of much interest supplementing some statements in the above lecture. Mr. Quinton, who died a few years ago, was born in 1807, and was a grandson of Hugh and Elizabeth Quinton, who came to St. John with Peabody, Simonds, White, and others, in 1762. They passed the winter at Fort Frederick and moved up to Maugerville with Israel Perley's party the next year. It was from his grandmother, certainly a reliable authority, that Mr. Quinton often heard, as he says in his letters, that the declaration of May 1776, by the Maugerville settlers, was "an act forced upon them in their defenceless state; the only chance, as it then appeared, to escape an impending and fearful calamity; a frightful Indian raid threatened, to all appearance seemed imminent. A clever ruse she always deemed it, to so tickle the ears of the rebel congress as to induce that body to hold back their Indian allies."

Mr. Quinton positively states that the Simonds-White-Peabody party of 1762 landed on the 28th of August—not in May as Mr. Perley has it—and that Fort Frederick was then unoccupied by soldiers. It was in the fort that many of the party passed the first winter. This date is also given by Mr. Lawrence in "Footprints," p. 4. Mr. Quinton says: "Fort Frederick in Carleton, then unoccupied, was where Captain Peabody, Hugh Quinton and wife, and some others, landed and took possession of the fort. Simonds, White and the balance of the little party went to the north side of the harbour, now known as Simond's Point [Portland Point] and commenced there the erection of a house, the material for which they had brought from Newburyport."

Mr. Quinton in his letter calls attention to an advertisement in the *Boston Gazette* and *News-Letter* of Sept. 20th, 1762, notifying, all of the "signers under Captain Francis Peabody for a township at *St. Johns River* in Nova Scotia, that they meet at the house of *Mr. Daniel Ingalls*, inholder in Andover, on Wednesday, the 6th day of October next, at 10 o'clock, p. m., in order to draw their lots, which are already laid out; and to choose an agent to go to Halifax on their behalf, and also to do any matters and things that shall be thought proper for them. And whereas, it was voted at their meeting, April 6th, 1762, that each signer should pay by April 20th: *Twelve shillings* for laying out their land, and *six shillings* for building a mill thereon, and as some of the signers have neglected payment they must pay the amount at the next meeting or be excluded and others admitted in their place. [Signed] James Frye, John Farnum, jr., Henry Ingalls. Andover, September 2nd, 1762." The lots were drawn and a location ticket given, which for a long time was all the settlers had to show for their rights. Grants from the Nova Scotia Government were afterwards obtained, though not in all cases, which gave rise to trouble subsequently. W. R. G.

For the REVIEW.]

## French Spelling.

The Minister of Education in France and the Director of Primary Education have lately been congratulated for publishing a circular, which is worth the attention at least of those who teach the French language; for they need not desire to be more French than the French themselves. The second paragraph in the extracts given below might be abused; it is certainly a pleasant elegance to spell decently, and it is a consolation to get letters without blushing for our correspondents, and school and college exercises, without the sad head-shake over that poor pupil's future disgrace when trying for some post of public employment. But still, if a foreign language cannot be taught just like a mother tongue (given even the favorable conditions of classes of few students, and no loafers, and of several hours' duration daily), yet there is no use trying to teach it in exactly the opposite way. That is true for the majority; there are angels, of course, who will learn anything, no matter what way you teach it to them; but the proof of the pudding is in the eating; and if you begin with the exceptions in *ou* at two hours a week, your pupils leave you after a year or some years, not taking much interest either philologically in the language which has given their own mother tongue half its vocabulary, and has had such an extraordinary influence on its grammar; or æsthetically, (if one may say so) in the language combining greatness in prose with good taste, and containing certainly the greatest number of moralists, thinking about human life, and saying valuable things about our lives, of any modern language that comes before us. Few pupils will take an interest, no matter what you do; some one will say: Of course, but teaching spelling and grammar in the spirit of this circular may perhaps raise the number—one in a hundred, one in a thousand. Teachers soon learn to count the units. W. F. S.

Paris, May 19, 1891.

I. All claim for arbitrary exactness must first be given up, whenever there is any doubt or disagreement of opinion, whenever the use is not as yet determined, or has been so only recently, whereas the present use varies whenever authors differ in opinion, and the Academy itself registers these differences. Until 1878, it was correct to write *consonance*; the Academy now allows *consonance*, by analogy with *disonance*. Until 1878 it was correct to write *phthisie* and *rhymthe*; since then the Academy suppresses one *h*, but the second *h* in *phthisie*, the first in *rhymthe*! Until 1878, *collège* was rigorously counted as a mistake; it should be written *collége*; to-day it is just the reverse.

The Academy gives its sanction to *agendas*, *alinéas*, and does not seem to allow *duplicatas*; it prefers *des accessits* without condemning *des accessits*. A number of ordinary words have,

in the same way, a spelling on which no one, unless from pedantry, can pretend to be infallible. By the authority of even the Academy one can write *clef* or *clé*, *sofa* or *sopha*, *des entre-sol* or *des-entresols*, *dévouement* or *devoiment*, *il paye* or *il paie*, *payement* or *paiement* or even *paiiment*, etc. In this case, and in every similar one, whatever the personal opinion of the corrector may be, he cannot ask the pupil to be more sure than the teachers are themselves.

II. The minister claims indulgence for the child when logic decides for him against custom, and when the mistake which he makes proves that he has all the greater respect for that which has formed the language itself, the natural laws of analogy. "One of the first things children are taught," said a master on the subject of philology, "are the seven nouns in *ou* which instead of taking *s* in the plural take *x*; *genoux*, *bijoux*, etc. But for what secret reason do they not give way to the common rule? No one has ever yet been able to discover it." Is it fair to count as mistakes violations in spelling which are really proofs of attention on the part of the pupil? For example, it is neither thoughtlessness nor ignorance, on the contrary it is reflection, which induces one to write *digième* if one writes *digaine*, or *dizaine* if one writes *dizième*. Logic will prevent one being content with the use of *imbécille* and *imbécillité* siffler with two *f*'s, and *persifler* with only one. Analysis will make *assoir* be written without an *e*, notwithstanding the *e* of *séance*, since every one has come to write *déchoir* without *e*, notwithstanding *déchéance*. Is there any master who has been able to give a good reason to justify the difference between *apercevoir* and *apparaitre*, between *alourdi* and *allonger*, *abatage* and *abatteur*, *abatis* and *abattoir*, *agrégation* and *agglomération*?

III. Finally, since the beginning of this century a number of rules have come into our French orthography, founded on distinctions which grammarians thought conclusive, which modern philology, with more regard for the very history of the language, confirm only with a great many limitations, and in every instance without attaching to them in any degree the traditional respect with which we want them to be surrounded. It is over these points that examiners and masters should be asked to pass lightly, rather than to make much of them. That is above all when the burden must be lightened. How many hours, absolutely useless for the education of the mind, have been devoted in even the primary schools to studying profoundly the rules of *tout* and *même*, of *vingt* and *cent*, of *un* and *demi*, to lecturing on the exceptions and the numberless sub-exceptions of the spelling of compound nouns, which is only a history of perpetual changes. The press has more than once called attention to the folly of the endless discussions to which such phrases as *des habits*, *d'homme*, or *d'hommes*, *la gelée de groseille* or *de groseilles*, *de pomme*, or *de pommes*, *des moines en bonnet carré* or *en bonnets carrés*, have given rise.

This over anxiety about spelling, concludes the minister, does not arouse in the pupils the feeling for beauty, the love of reading, nor even the true critical faculty.

In examining words so minutely they run the risk of losing sight of the meaning, and they will never know what writing really means if it is not their first impulse to seek in the subject matter, underneath the cover of the words, the meaning which is its life."

I take great interest in reading your valuable paper. The hints given in it on Arbor Day were alone worth a whole year's subscription.  
G. M. R.  
Kings County, N. B.

For the REVIEW.]

**The Harvard Summer Schools.**

In educational centres, one hears a good deal in these days about "University Extension." Both public and universities are rapidly coming to recognize that the latter's sphere of immediate and direct usefulness need not, and should not, be limited to its regular classes of students only, but is capable of being, and should be, extended to include also a large number of others who wish to avail themselves of its advantages. This extension of advantages is taking different forms in different institutions, but one of its most important phases is that which has been adopted for several years past by Harvard University, in the maintenance of summer schools in different departments.

The main principle upon which these schools are founded is this: to secure, during several weeks of the summer vacation, to all who come, both men and women, a course which will afford as many as possible of the advantages open to regular college students. The instruction, given by the college professors or instructors, is similar in method and quality to that of the regular college courses, and all advantages of laboratories, libraries, museums, etc., open to college students are open to summer students as well. In fact all of the resources of the teaching departments of the university are placed at the disposal of the summer schools.

This year courses in the following subjects will be given: Anglo-Saxon, English, German, French, Chemistry (four courses), Botany, Geology (three courses), Physics (two courses), Physiology and Hygiene, Field Engineering (two courses), Physical Training.

It is with the methods of the school of botany that the present writer is most familiar, but in its aim and general method it may be taken as a type of them all. It opens June 29th and continues five weeks. By means of daily lectures, fully illustrated by appropriate specimens, diagrams and models; by several hours daily of actual laboratory work under careful supervision upon selected living plants; by short excursions and conferences amidst the rich abundance of material in the botanical garden; by longer excursions to good botanical localities; by use of botanical libraries and museum materials; by careful work with compound microscopes and accessories, the effort is made to give all students a good knowledge of the main principles of botany, and especially of the best *methods* known in the university of studying and teaching botany. One far removed from the centres of educational activity usually has very little idea of the rapidity of recent advances in methods of

teaching the sciences, and it is a great object of the schools to bring their students into touch with the results that experience has approved. In five weeks of steady systematic work a very great deal, both in acquisition of knowledge and in training in methods, can be done.

The objection often raised against these schools, that they require hard work at a time when most of their students (for the majority are teachers) are wearied with their year's work, and need the rest, is based largely on the antique fallacy that rest is synonymous with idleness. To the rightly-constituted mind (the kind for which the summer schools are intended), there should be more rest in change of occupation than in absence of occupation. The student's mind is in this like the soil, that when rightly cultivated and given a wise rotation of crops, it does not need to lie fallow. The complete change of occupation involved in the transition from teacher to learner, from old matter and methods to new, from home to the novel atmosphere and fresh associations of a university city is generally enough in itself to bring refreshment and inspiration for the hard course of study. A most pleasant feature, too, of all of the schools, is the opportunity afforded of meeting enthusiastic persons of kindred tastes from other sections of the country, and apart from the interest of such meetings there must result a general broadening of one's field of view, which is of utmost value to every student. Women as well as men are admitted to the schools and have precisely the same advantages.

The fees are as low as they can possibly be made. The majority of the schools do not pay expenses. Of late years, owing to the opening of one of the college dining clubs, the cost of board to students has been much reduced, so that now it is no greater than in the larger towns of the Maritime Provinces. Full particulars on these and other points can be obtained by anybody by addressing the secretary of the university, at Cambridge, Mass. The university wishes that all interested persons should know of these schools which have been established for their benefit.

W. F. GANONG.

Cambridge, Mass., April, 1891.

Tennyson can take a worthless sheet of paper, and by writing a poem on it make it worth \$5,000; that's genius. Mr. Vanderbilt can write fewer words on a similar sheet and make it worth \$5,000,000; that is capital. The United States Government can take an ounce and quarter of gold, and stamp upon it an "eagle" and "twenty dollars;" that's money. The mechanic can take material worth \$50, and make it into a watch worth \$100; that's skill. —*Ex.*

For the REVIEW.]

## Arbor Day Reports.

To the Editors of THE REVIEW:

Arbor Day seems to have been observed more generally than ever this year, and no doubt other Inspectors besides myself have been perplexed by some of the reports of its observance that have been sent in.

Inspectors are required to report to the Education Department in the following form:

Number of district.....  
 Parish.....  
 Name of teacher.....  
 Number of trees.....  
 Number of shrubs.....  
 Flower beds.....  
 Improvements.....

Teachers often send their reports without the number of the district, and inspectors cannot remember it in every case. The boundaries have to be consulted or note books looked up, which is somewhat tedious. Sometimes the number of trees is not given. Two teachers reported the observance of Arbor Day this year as follows: "Arbor Day was observed in this district by *the planting of trees.*"

Where shrubs are planted many teachers do not report the number, and few teachers give the exact number of flower beds, simply reporting: "Some flower beds were made." Improvements are usually more carefully noted. I think there should be an additional general heading in the report, viz., one noting the school programmes carried out, as this is not by any means the least important part of an Arbor Day observance. Many schools have no other way of observing the day, and all schools should devote a portion of the day to it. I do not write this with the purpose of finding fault, which, indeed, I have very little occasion to do, as my reports, received from teachers, are usually very satisfactory, but for the purpose of showing to the teachers, through your largely circulated paper, the nature of the report an inspector has to send in. If teachers would send their reports to accord with the headings I have given, we would not only get a more accurate idea of the work performed, but it would be helpful to the inspectors as well.

Yours respectfully,

INSPECTOR.

May 30, 1891.

In my opinion, the boy who leaves at the end of a common school course with a love of reading good books, is better prepared for a life of honor and influence than one who passes through a high school course without that love; and he who has an ordinary high school education, combined with a taste for good reading, is better equipped for the duties of life than the graduate of the best college or university in the country without that taste.—*J. B. Peaslee.*

## Childhood of Charles Linnæus.

(Translated from the French of Louise Colet by Helen F. More.)

(Concluded.)

"It is time," she said to him. "Day is dawning. Dress yourself, pray to God, eat your breakfast, and hasten out before your father awakes. You will have an hour in which to look for your plants. Go, my child, since it is your delight and your happiness."

The child thanked his mother, and while she helped him to dress he told the wonderful dream which he had just had.

Without understanding it, his mother saw in it a presage of happiness and of glory for her son, and determined to help him more and more in his vocation. As soon as he was dressed she gave him a wooden cup full of smoking porridge, which the child eat with avidity. Then she wrapped him in a little overcoat of coarse cloth, turning up the collar, which concealed the fresh face of the child as far as the ears. He set out joyfully, stick in hand. The good mother had abridged her sleep by at least two hours for the sake of her son, and to gratify his wishes.

Look into your memories, you children who are reading this, and you will find that your mothers have all taken the same tender care of you.

For a few days little Charles was able to botanize in peace among the mountains, and to discover in the mazes a few poor flowers and frail mosses which the snow had spared. But one morning, when his father had awakened earlier than usual to go and see a sick man whom the night before he had left in a dying state, he flew into a violent passion on not finding his son at home. In vain the mother made some excuse. The harsh man was not deceived by it, and declared that the next day the child should be sent to the Latin school at the little town of Vixiæ. The mother burst into tears. The father declared that her tears would do no good; when little Charles stole into the house, he found that dissensions and grief had entered it through his fault. He endeavored to excuse himself, promising his father a blind obedience for the future. The latter remained inflexible. He went out, ordering the mother to get his things ready, and that he would take him himself to Vixiæ the next day.

Ah, how this sudden separation tore the hearts of the mother and child! The mother above all could not resolve to separate herself from her beloved son. Since his birth he had never left her for a single day.

"No, no! it is impossible," she cried, covering her tearful face with her hands.

Charles, distressed by the sight of his mother's tears, stifled his own grief, and tried to encourage her. He said:

"The town where I am going is near here, and we shall see each other often. Then, too, I will work well and fast in order to satisfy my father, and I shall return."

But the mother still wept. A single day of separation was a great anguish. However, knowing that her husband was inflexible in his resolutions, she began to pack her son's clothes in a little trunk. She put at the bottom the beloved and fatal herbal which had been the cause of their separation. Besides this there was a little money in small change, a few sugar-plums and dried fruits—household dainties with which the mother delighted to regale the children.

When the pastor returned the trunk was packed, and perceiving that his orders had been followed, he appeared somewhat pacified.

The rest of the day and the evening passed without quarrels, but very sadly. The father read his Bible as usual, the little girls knitted beside their mother, as they had done the evening before. Nothing was to be heard but a few stifled sighs or broken words. As for Charles, he was resigned, and bent his head over the Latin exercises which he was translating.

Bedtime had arrived, family prayers were over. Then the son having wished his father good-night, the father replied:

"Good-night, my son. To-morrow, at day-break, we leave for Vixiæ."

The child bowed silently, stifling his tears.

As soon as her husband was asleep, the mother glided to the bedside of her son, on whom she lavished her caresses, and gave him special charges in regard to his health. This was their real farewell, for the next day the stern minister hastened their departure.

As it was very cold, and the roads were covered with snow, our travelers left in a sleigh. The motion and the scenes through which they passed, and which were partly new to him, at last roused Charles from his grief. But when he found himself in the town, so dull and deserted, and, above all, when the time came to enter the dark walls of the Latin school, the poor child felt his heart fail.

His father briefly recommended him to the severity rather than to the care of the principal, who was a friend of his. Then he returned home, having, as he thought, accomplished his duty.

Charles at first felt lost and deserted, but the friendship and interest which he found in some scholars of his own age, restored his courage. He resolved to work, so that his father would be satisfied, and as long as the winter lasted he applied himself vigorously to Latin and theology. When spring came it was to him as a stormy and all-powerful breath which carried him far from the walls of the school, across the mountains and valleys, which began to be covered with growing vegetation. The air which he breathed was full of the scent of flowers and plants. He felt irresistibly drawn toward them. His beautiful dream came back to his mind. He saw in it an emblem of his destiny, and cried, in his present anguish:

"No, no! God did not create me to be a Protestant minister. It is my duty to adore him and proclaim his glory in another way."

He resisted at first the temptations of his unconquerable instincts. But one day, when the whole school was walking in the country, he separated himself from his companions, and lost himself amid the rocks, in a gorge carpeted with creeping plants and flowers. There, captivated by nature, embracing her, and caressing her as he might have caressed his mother, in the contemplation of the treasures which offered themselves to him he forgot everything else. Night surprised him while filling his pockets and bosom with the plants which he had collected. Arrested in his ardent search by the darkness, he suddenly remembered the school and its discipline. Terrified at his forgetfulness of the rule, he dared not go back and beg pardon of the principal. Night had come on. Agitated, shivering, and overcome with fatigue, he slept in a moss-covered hollow in the rocks. The next day he was found by one of the servants of the school, and was taken back like a vagabond.

The principal wrote an account of the son's exploit to the father. The latter believing him to be perverse and incor-

rigible, replied to the principal that it was evident that his son would make but a poor minister, but that, to punish him for his rebellion, he would humiliate him by making him a workman. He, therefore, sent directions that he should immediately be placed with a shoemaker as an apprentice.

Charles was of a mild and yielding disposition. He did not resist, and found at first a sort of satisfaction in the half freedom which this new and strange profession left him. Before his day of manual labor began he could wander through the country, and on Sunday he could spend the whole day there. During the evening and night he classed the plants and flowers which he had collected, and wrote treatises on each of them. But gradually this double and incessant labor of mind and body affected his health. Besides, it was a severe trial for him to spend the day with ignorant and coarse companions. He was often sharply addressed when he was silent, was reproached for pride, and sometimes they even tried hard to make him quarrel with them. This struggle with destiny in which he was engaged finally overcame him. He fell suddenly ill, and the master shoemaker, who liked him, as one of his best workmen, sent for the most skilful physician of the country.

This was a very learned man named Rothman. When he reached the bedside of poor Charles he found him in a high fever and slightly delirious. The doctor would not arouse him from his uneasy slumber, and studied in silence the symptoms of his illness. He found great excitement of the brain, and he was confirmed in his opinion by seeing on the apprentice's table his herbals and his open manuscripts. He read a few pages of the latter, then suddenly fell into a long reverie while holding the pulse of the invalid, which was very high.

Charles continued to sleep, but his slumber was painful and broken, as if he were oppressed by some nightmare. Yet he had a beautiful dream, even more glorious than the one he had before had under his father's roof, but it did not bring him the same satisfaction. This dream seemed to him a mockery of his present destiny. Sometimes one reasons in dreams. He fancied himself surrounded by four powerful men, with scepters in their hands and crowns on their heads. By their crowns, their arms, and the decorations which they wore, he recognized these men as the King of Sweden, the King of France, the King of England, and the King of Spain.\* All four smiled on him, spreading treasures at his feet, and placed on his head the coronet of nobility. He, dazzled, struggled against vertigo, and it was this which caused the uneasiness of the slumber.

The good doctor, full of anxiety, followed all the phases of this troubled sleep. At last he administered a quieting draught to the sick boy, whose breathing gradually grew calmer, and at last he awoke without effort. The fever gave way, thanks to the assiduous care of the compassionate physician, who had conceived a great friendship for the poor workman. As soon as he was convalescent he lent him the works of Tournefort, one of our celebrated French naturalists, and as Charles expressed his enthusiastic admiration while speaking of him to the doctor:

"Your renown will some day surpass his," said the latter.

"O! how can you say that?" cried the child.

"I say, my young friend, that I have read your books, looked over your herbals, and that some day you will be the first naturalist in the world."

Charles looked at him sadly and doubtfully.

"Are you not laughing at me?" he said.

"I," replied the excellent Doctor Rothman, with excitement. "How can you think of that? I will take you with me, you shall finish your studies liberally at the University of Lund, and before long, I am sure, you will be a professor yourself."

The good doctor's prediction was fulfilled. A few years from that time the chair of botany in the University of Upsal echoed with the wonderful learning of the young professor Charles Linnæus.

\* These four sovereigns heaped honors on Linnæus.

### Programme for a School Exhibition.

School exhibitions when properly arranged can be made educational. Many programmes could be suggested, but the following seems to be good:

1. Opening. Song by a class adapted to the season of the year, and the character of the audience.
2. Recitation. Greeting.
3. Essay. "Motives," or "A Story." This will depend upon the age and character of the class.
4. Charade. Acted. This can be taken from some book of dialogues, charades, etc., in which many may be found.
5. Singing by the whole school.
6. History exercise, by a class with drawings on the board and some stories recited.
7. Dialogue.—Laughable.
8. Song by a young lady.
9. Geography with map-drawings executed before the audience.
10. Dialogue by little girls in costume.
11. Song.—General, by whole school.
12. Rapid exercises in quick addition. This can be made very interesting to the audience, who will involuntarily join in the solutions.
13. Recitation by smallest children, in some character-pieces. These can be found in educational journals.
14. Close by having some general recitation or song, that shall include as many of the school as possible.

Programmes should be planned to be instructive as well as entertaining.

### The Influence of the Schools.

There is a general impression that the spread of education has had a tendency to make the young people who enjoyed its advantages discontented with life on the farm, and to cause them to crowd into the cities and to apply themselves to the professions and to mercantile pursuits. The superintendent of education for the province of Ontario, where the public school system is probably as thorough, complete, and satisfactory as in any other part of the continent, shows that so far as that province is concerned, the system has not had the supposed result. Of the pupils who left the high schools last year, only 366 matriculated into the universities, and 1,161 went into mercantile life, while 9,506 returned to the farms. In the face of these figures there is not much room for the belief, that the high schools tend to push pupils into pursuits which are already overcrowded.—*Daily Echo (Halifax.)*

### TOPICS FOR THE SCHOOL ROOM.

This year a new cable will be laid connecting Halifax, N. S., with the West Indies and British Guiana. Name the other ocean cables. With one or two trifling exceptions, the submarine cables of the world, which stretch over 120,000 nautical miles and have cost \$200,000,000, are of British construction.

On the Canadian Pacific a train recently ran from Vancouver to Montreal in 92½ hours, including three hours detention from a mud slide. From Smith's Falls to Montreal, 128.3 miles, the running time was 2h. 5m., or at the rate of 61.6 miles an hour.

Gold has been found in the Stewiacke valley, N. S. Since the discovery of the precious metal in the rocks of Tangier in 1861 the development of Nova Scotia's gold mining industry has been steady. The field extends over about 6,000 square miles—a belt from ten to forty miles wide along the Atlantic coast from Cape Sable to Cape Canso. Nickel has also been found in Queens county. What other parts of the Dominion are gold-producing?

Leprosy exists in New Brunswick. In the lazaretto at Tracadie there are eighteen patients. There were five deaths during the year. All infected persons are gathered into the lazaretto to prevent the spread of the disease. This is a skin disease, with eruptions, producing great deformity. In addition, there may be wasting of the muscles, falling out of the hair and nails, destruction of the bones and joints. It is incurable, and probably contagious. Account for its appearance in New Brunswick. Dr. Smith of the Tracadie lazaretto has been ordered to British Columbia to investigate the leper scourge which appears to be rapidly developing in that province. Darcey's Island, off the coast of Vancouver Island, has been set apart for the isolation of the afflicted ones.

The census returns just completed show the population of the Indian Empire to be 285,000,000, an increase of fully 30,000,000 since the last census taken in 1881.

The Royal Geographical Society gives the present population of the world as 1,487,600,000, an increase of eight per cent. in the last ten years. Asia has the largest population, 850,000,000, and the lowest rate of increase; while North America has 89,250,000 or about fourteen to the square mile. It has shown the most rapid growth, twenty per cent., during the past ten years.

At the session of the Federation convention at Sydney, New South Wales, April 8, the delegates adopted the new constitution bill, and another extensive government by English-speaking people was established. The constitution is based on that of the United States, and the Australasians do not consider their states as provinces, but take the name of Commonwealth instead of Dominion. Politically, Australasia includes the English colonies in the South seas—those self-governing, as Victoria, Queensland, New South Wales, South Australia, and Tasmania, with the crown colonies of New Guinea, Fiji, the Western Pacific islands, and some smaller ones. A Federal Council of the Colonies was created by the British parliament in 1885, to meet at Hobart Town, Tasmania, for the discussion of intercolonial questions. New South Wales would not accept this act; but in 1889 its premier, Sir Henry Parkes, issued a call to the other colonies to meet in convention to form a true Australasian federation. The scheme has now been successfully carried out. The

islands, embraced in the federation have a territory nearly as large as Europe, with a population of nearly 5,000,000, growing rapidly, and with immense agricultural and mineral resources. The new nation will be a powerful agent in spreading the English language, literature, and civilization south of the equator.

The company that proposes to connect Winnipeg and Hudson Bay by rail has promised to complete one hundred miles of the road this season. This will bring Winnipeg many hundred miles (commercially) nearer the sea, and will furnish an outlet for the grain of a large territory to Europe. Trace a route, by way of Hudson bay, from Winnipeg, to Europe.

Sir John Alexander Macdonald was born in Scotland in January, 1815, has resided in Canada since 1821, has been fifty years in public life, has held office under eight Governors-Generals, has been premier of the Dominion for twenty years. The qualities and faculties that seem to have contributed to his success in public life are chiefly these: A well regulated ambition, concentration of aim, shrewd insight to the motives that actuate men, adaptability and lack of strong convictions, cosmopolitan largeness of spirit, inflexible will and undeviating purpose.

The distance around the world is smaller the farther we get from the equator, which may be seen by referring to a globe. This gives the Canadian Pacific railroad an advantage over the Pacific railroads of the United States, as was recently noted in their advertisement of an eighty-day trip around world.

#### School Management.

"Miss A. has the true teacher spirit, and knows her work through and through," said a discriminating principal, "but she lacks the secret of school management. I always leave her room with the feeling that much of her valuable working power and influence is lost, through this inability to manage."

Miss A. is not alone the sufferer in this matter of failing to plan for and to handle little children successfully. The key to successful school management does not lie inside book covers, or in good-advice lectures on the subject. It is inherent in the teacher to a great degree, but like everything else, is more or less a matter of acquisition. No indifferent teacher is in a mental attitude to acquire the secret. At the very foundation of the power to learn the ways and means for focusing the attention and good will of the school, must exist a burning, dominating desire for success in holding and manipulating half a hundred little minds and bodies. Then, and not till then, do secrets reveal themselves, and every straw becomes an indication of the current of the desired truth. Right here may arise the error of overdoing by the wrought-up over-anxious teacher, and her very intensity of earnestness may react against her and show itself in the ringing of the bell, stamping of the feet, and loud command to secure the attention that can alone be won, and not enforced. A knowledge of mental science, of the working of the human mind, and the important part

which the sensibilities play in this matter of securing personal control, are of great benefit here. A touch of sympathetic liking for the little children, honestly felt and honestly shown, is worth tons of preaching duty to them in the matter of school behavior. This kindness of heart toward them as little men and women, finding expression in a radiation of magnetic interest in eye and tone, joined to that brooding motherliness indispensable to a primary teacher, will be felt by them as it cannot be by older and world-worn people. No sham here will be tolerated for a moment. Children are born detectives in these things, and to be what one *seems* is the teacher's only salvation.

As an outside help to school management, music stands pre-eminently at the head. The magic of its influence on a body of tired, marching soldiers has passed into a proverb. Its effect will be no less marked in the school-room when ambition ebbs and efforts lags; its low melody will soothe restlessness and school ennui far better than any talk can do, for the very office of music is to reach where words cannot. If there is no musical instrument in the school-room, the singing of the little children, though far enough from any musical standard, is far better than none, if the selection of song be suited to the needs of the hour. Happy is the teacher who can sing to her children. It is an indispensable equipment of the primary teacher.—*N. Y. School Journal.*

#### Proof of the Earth's Motion.

Take a good-sized bowl, fill nearly full of water, and place it upon the floor of the room which is not exposed to shaking or jarring from the street. Sprinkle over the surface of the water a coating of lycopodium powder—a white substance which is sometimes used by ladies in making their toilets. Next, upon the surface of this coating of white powder make, with powdered charcoal, a straight black line, say an inch or two in length. Having made this little black mark on the surface of the contents of the bowl, lay down upon the floor close to the bowl a stick or some other straight object, so that it will lie exactly parallel with the charcoal mark. If the line happens to be parallel with a crack in the floor, or with any stationary object in the room, this will serve as well. Leave the bowl undisturbed for a few hours and then observe the position of the black mark with reference to the object it was parallel with. It will be found to have moved about, and to have shifted its position from east to west—that is to say, in that direction opposite to that of the movement of the earth upon its axis. The earth, in



simply revolving, has carried the water and everything else in the bowl around with it, but the powder upon the surface has been left behind a little. The line will always be found to have moved from east to west, which is perfectly good proof, says the *St. Louis Republic*, that everything else contained in the bowl has moved the other way.

#### Musical Instructions.

As a result of Rev. Mr. Anderson's visit to our school, for the purpose of instructing the teacher in the principles of the Tonic Sol-Fa method of singing, with a view to introduce it into the schools, the following teachers received certificates of competency.

Elementary—Miss Burgoyne.

“ —Mrs. Archibald.

Junior—Miss McLatchy.

“ —Miss Bennett.

“ —Miss Dimock.

The school board has authorized the purchase of the material necessary for the teachers to carry out the above system, which has been authorized by the C. P. I.—*Windsor Tribune*.

#### PERSONAL.

A. S. MACKENZIE, B. A. (Dalhousie), at present Fellow in Physics, Johns Hopkins University, has been appointed to the lectureship in Physics in Bryn Mawr (Penna.), for 1891-92.

THE UNIVERSITY OF MCGILL, Montreal, has conferred the degree of LL. D. on Rev. Moses Harvey, F. R. G. S., of St. John's, Newfoundland. No man is more worthy of the distinction, whether the case is considered from the standpoint of scholarship and personal merit, or from the pre-eminent service which he has rendered his country during a long and active life,—a service which, in our opinion, will mark him in history as one of the greatest men in the roll of worthies of the ancient colony.

D. M. SOLOAN, B. A. (Dalhousie), at present filling the English and History Mastership in the Pictou Academy, has been offered the principalship of the Protestant Academy, St. John's, Newfoundland. Mr. Sloan is a young man of superior accomplishments. His career as a student in the university where he won the distinction of a Munro scholar on entering, was a brilliant one. He graduated with special honors in English and Literature, filled the position of English Master in the Pictou Academy with distinguished success, and has already won a literary reputation for himself abroad, which but few attain after years of labor.

It is with deep regret we record the death of Louis A. McKenna, vice-principal of the St. Mary's Boys' School in Halifax, the late energetic secretary of the Normal School Alumni Association, and assistant secretary of the Summer School of Science of the Atlantic Provinces. His career was a useful and very promising one. He was an under-graduate in law of Dalhousie, was an active worker in many societies and a distinguished member of the athletic clubs. Consumption following a severe attack of typhoid fever, in spite of the winter's residence in the West Indies, bore him away on the 30th of May, in the twenty-fifth year of his age, at his home in Dartmouth.

REV. MOSES HARVEY, LL. D., F. R. G. S., has been made a fellow of the Royal Society of Canada at its meeting in Montreal.

INSPECTOR D. P. WETMORE, who for a long time has been in Boston, undergoing medical treatment, has returned to his home in Clifton, N. B. We are glad to learn that Mr. Wetmore is much improved in health.

CHIEF SUPT. CROCKET is to be one of the speakers at the Toronto convention, and Miss Maud Narraway and Miss Kate Bartlett of the St. John high school, are to read papers.

MR. S. A. MCLEOD, A. B., who has so long and acceptably taught the Sussex Grammar School, retires at the end of the present term, to go into the insurance business in St. John.

W. KENDRICK HATT has been appointed to the chair of civil engineering and surveying in the N. B. University. Prof. Hatt stood first in his class in Cornell University and was a distinguished graduate of N. B. University.

PROF. LAWSON, the father of field botany in Canada, as his distinguished pupil, Prof. Macoun, Botanist of the Geological Survey of Canada, is wont to call him, has been elected president of the Botanical Club of Canada.

A. G. LAIRD, B. A. (Dalhousie) has been appointed to a lectureship in Greek at Sanford University, Cal.

J. C. SHAW, B. A. (Dalhousie), has been awarded a Shattuck scholarship of \$300 at Harvard.

F. J. MCLEOD, B. A. (Dalhousie), has won a similar scholarship at Harvard.

J. W. BREHAUT, B. A. (Dalhousie), has been awarded a Price-Greenleaf scholarship of \$250 at the same university.

### AMONG THE SCHOOLS AND COLLEGES.

The *Courier* announces the marriage of Miss May Webber, teacher at the Ledge, Charlotte Co. Miss Webber was one of our most efficient and esteemed teachers, and has our best wishes in her new sphere.

Misses Kerr and Erb and pupils, assisted by local talent, gave an excellent school entertainment recently at Beaver Harbor, Charlotte Co., the proceeds of which were ample to procure a flag for the building. It floated to the breeze for the first time on Arbor Day.

Miss Mabel Fanjoy, of Nerepis station, Westfield, Kings Co., has been enabled by a school concert to procure much apparatus not usually provided in country schools, and beside to lay the foundation for a school library.

Misses Annie and Lily Hanson, teachers in Milltown, have obtained leave of absence for a year, which they will spend in California.

Woodstock, N. B., has the distinction of paying its teachers the lowest salaries of any town or village in the Province. It is said that some of its staff get as low as \$70 per term. This is not economy but meanness, and the schools must suffer in proportion. Teachers are human, and ought not be expected to do first class work for third class pay. It matters not what ambition there may be, "Chill penury will repress their noble rage."

It appears that the entertainment in aid of the school library in Moncton was not a success as far as attendance was concerned. It cannot be that such a wide-awake town as Moncton is not alive to the importance of school libraries. We would advise the children to carry around the hat.

Some of the teachers of St. Stephen are members of the Calisthenic Club, conducted by Miss Todd, and the results are very apparent in the increased attention given to physical culture in the schools.

The teachers of Milltown have arranged for botanical excursions under the excellent supervision of Mr. Jas. Vroom, of St. Stephen.

From St. Stephen to St. Andrews, a distance of twenty miles, there is not an unpainted country school house.

Generous contributions toward the expenses of Arbor Day observance were made by the trustees of St. Stephen, Milltown and St. Andrews, and the day was fittingly observed in each of those towns.

The Board of St. Stephen are fully alive to the importance of musical instruction in the schools, and it is probable that arrangements may be made by which it will be given.

It is to be regretted that the excellent musical training given to the pupils of Milltown last year by Mrs. Kerr has been discontinued, but it is hoped that it is only temporary.

Mr. J. W. Butler, of Milltown, presented the schools with a handsome flag, which was hoisted for the first time on Arbor Day.

The citizens of St. Andrews also contributed a flag and staff for the advanced school building. It would appear that in the future the schools across the line are not to have a monopoly as far as flags are concerned.

Frequent teachers' meetings are held by the teachers of both St. Stephen and Milltown, at which papers are read and discussions take place relating to school work. It is proposed that the teachers of both places unite at some of these meetings.

Through the exertions of the teacher, Mr. Wm. Brodie, and pupils of the St. Andrews Grammar school, assisted most generously by the citizens of the town, a very fine school library has been procured for the school.

One of the first things to attract attention in some of the schools in St. Andrews are side tables furnished by the Board, on which are copies of the *Illustrated London News*, *Youth's Companion*, etc., for supplementary reading at recess or on Friday afternoons. These papers are subscribed for by teachers and pupils.

The Charlotte County Teachers' Institute is to be held this year in St. Stephen, probably in September. There is to be an exhibition of manual work, which, from the interest apparently taken in it by some of the schools, bids fair to dwarf the provincial exhibition of last year.

The trustees of Milltown and St. Andrews have voluntarily given some of their teachers a generous increase of salary. It was a graceful and substantial recognition of the merit of their teachers, and will be productive, if possible, of increased interest and exertion on the part of the recipients.

A very successful school concert was recently had in St. Martins, St. John Co., by the teachers and pupils of the schools. A goodly sum was realized, which is to go toward a school library.

Harvard spends over \$50,000 a year on its library. During the past fifty years no smoker has graduated with the first honors of his class in this university. What does this mean?

The winners of the prizes at the University of N. B. this year are: Douglas gold medal, F. P. Yorston; Governor-General's gold medal, Francis D. Walker, St. John; Silver medal, Adam S. Dickenson, Carleton Co.; Alumni gold medal, Francis D. Walker, St. John; Campbell memorial prize, Miss R. W. Henry, St. Stephen; Hazen prize, \$40, Miss Shaw, St. John. Mr. Francis D. Walker thus wins two gold medals in one year—a somewhat rare achievement.

Yale now gives a regular course of instruction in Volapuk as well as in a great number of other languages. This latest

language, begotten of linguistic knowledge, bids fair to compete with the others all begotten in ignorance. What a heresy to attempt the adaptation of language to man, instead of adapting man to the language. Soon we may find people adapting their English spelling to their convenience, instead of making it convenient to adopt the spelling; and even the shoemaker may come to fit his shoes for the feet instead of forcing the foot to fit the shoe.

The closing exercises of Acadia College were held during the first week of June and were never more brilliant. The whole senior class, *forty-three*, with a single exception, graduated as Bachelors of Arts. The numbers in each class for the year just ended are given as follows: 4th year, 43; 3rd year, 29; 2nd year, 30; 1st year, 34.

The University of Dalhousie has issued the calendar of the new faculty of pure and applied science. It outlines *seven* different courses leading to B. Sc. "A" lays a thorough-ground work for engineering and may be followed by the degree B. E.; "B" for engaging in chemical industries; "C" for science masterships in our high schools and academies; "D" for medicine; "E" for civil engineering; "F" for mechanical engineering; "G" for mining engineering.

Truro. Arbor Day. Some trees were planted where there were vacancies. *Two hundred* flowers were placed in the different class rooms of the schools of the town. Military drill has been introduced into the academy—Instructor, W. E. Rosendale, a graduate of the Royal Military College.

Pictou. Summer term of academy opened with about 150 students, divided as follows: 1st year, 50; 2nd year, 46; 3rd year, 32; 4th year, 13.

E. L. Armstrong succeeds Peter Fraser as head master of the West End schools. A. O. Macrae, B. A. (Dal.), succeeds V. G. Frazee, B. A. (Dal.), who is going into the legal profession, as mathematical master in the academy. D. M. Soloan, B. A. (Dal.), English master, has accepted the principalship of the Presbyterian Academy, St. John's, Newfoundland. Here is a position for a first-class man.

Sydney. The academy advertises for a mathematical master.

The science students at Acadia, under Professor Coldwell, chartered a steamer to explore the natural history of the enchanting regions surrounding the Basin of Minas. That is the way to study natural history.

Halifax. The County Academy opens with an attendance of about 250, divided as follows: 1st year, 102; 2nd year, 88; 3rd year, 37; 4th year, 24. Arbor Day was celebrated in all the schools by the planting of trees where desirable, by Arbor Day addresses and exercises, to which was added in some schools, the presentation adoption of the principles of the Bands of Mercy of the S. P. C. A. by the pupils.

The Ladies' College, Halifax, is undergoing extensive sanitary improvements under the direction of Richard Fleming, C. E., of Montreal, one of the ablest sanitary engineers in America.

The La Salle Academy gave a brilliant exhibition of declamation exercises about the end of May.

Amherst. *One hundred and fifty trees* were planted around the new school buildings on Arbor Day.

Supervisor McKay, of the Halifax schools, has been for about a month examining the working and results of the manual training schools in the States, preparatory to the opening of the department in connection with the County Academy.

Professor MacGregor, Dean of the Faculty of Science in Dalhousie, gave the popular scientific lecture of the meeting of the Royal Society to a large Montreal audience in the Queen's Hall. The subject, which was obviously one of the most difficult to treat before a popular audience—*The Laws of Molecular Interaction in the Liquid Solutions*—was, with the aid of delicate experiments magnified and projected on the screen, handled with extraordinary ability and with fascinating clearness. It was the astronomy of the molecules; and a charming new universe was disclosed to the most of his delighted audience, scientific as it was.

The Halifax School for the Blind gave a magnificent house warming last month. Principal Fraser has much reason to feel satisfied with the success which has attended his intelligent and vigorous administration of this institution. The country believes in him.

The closing exercises of Mt. Allison University took place the last of May and were of a character of more than usual interest. During the year the attendance of students has been large, both at the university and at the academies. Facilities for doing excellent educational work have never been greater, and under the wise guidance of Dr. Inch there has never been a period in the history of the institutions when it seemed more capable of justifying the high expectations of its friends and supporters. There were eleven graduates who took the degree of B. A., three received the degree of M. A. and one B. D.

The Baptist Seminary at St. Martins held its closing exercises the second week in June. The graduating class was the largest in the history of the institution, numbering eighteen.

The public closing exercises of the N. B. Normal School took place June 8th. The winners of the Governor-General's medals were: Miss Mary K. Tibbitts, of Fredericton, and Miss Ganong, of St. Stephen. The valedictory was Miss Beateay, of St. John. The examinations for license have been going on the past week.

Mr. Kerr, Principal of the St. John Business College, directs attention in the present number of the REVIEW to the facilities his institution affords teachers and students for making a profitable use of their summer vacation.

The following are three subscriptions to "Children's Relief Fund": Miss Sproul, Minudie, \$1.70; Miss McKay, Earltown, \$1.10; — Tatamagouche, \$1.00.

E. J. LAY.

## QUESTION DEPARTMENT.

B. O'G.—Will some of the readers of the REVIEW kindly answer the following question—it is in a review exercise in Hall's Elementary Arithmetic: How many pounds of gold are actually as heavy as twelve pounds of iron? I have found the REVIEW a great help.

Work out the following proportion: As the specific gravity of gold, 19.2, is to the specific gravity of lead, 7.8, so is 12 lbs. of lead to the required weight of gold.

W. E. M.—In the extraction of cube root in Sangster's Arithmetic, please explain why you multiply by 30 and 300.

We doubt that we can explain it better than Sangster. The method is an abbreviation of the algebraic procedure. Example: Extract the cube root of  $a^3 + 3a^2x + 3ax^2 + x^3$ . This algebraic quantity is taken because it is the cube of the simplest possible binomial,  $a+x$ . A binomial is taken from the answer because it can represent all the elements in an answer, however long.  $A$  may stand for part of the root found, and  $x$  for the part of the root going to be found in the next operation for finding an additional figure of the answer.

Or, 300 is made up of the factor 3 in the second term of the expansion of  $(a+x)^3$ , and the square of ten by which  $a^2$  is multiplied when another figure is sought as the unit in the root.  $(a+x)^3 = a^3 + 3a^2x + 3ax^2 + x^3 = a^3 + (3a^2 + 3ax + x^2)x$ . What is within brackets is the formula of the divisor when working to find  $x$ . 30 comes from 3 in the  $3ax$  within the brackets and  $a$  being considered in the order of tens when working for unit  $x$ .

P. E. I.—I send a few mosses which I picked up to-day. I would like to know their names. If you would be so kind as to give their names in the EDUCATIONAL REVIEW you would much oblige. It would help me in the study of the mosses which, if not too difficult, I intend to try. A few years ago you gave me the names of a few ferns, and with that help I was able to identify all the ferns growing here. \* \*

No. 1. *Ceratodon purpureus*, Brid. (Purple Horntooth Moss). "Horntooth" referring to the goat's horn-like appearance of the teeth of the peristome under the microscope, and "purple" to their color. No. 2. *Polytrichum juniperinum*, Willd. (Juniper-leaved Hair Cap Moss). Fertile immature and rather depauperate. No. 3. *Sphagnum acutifolium*, Ehr. (Sharp-leaved Bog Moss). No. 4. *Polytrichum juniperinum*, Willd. Sterile-fond. No. 5. *Hypnum Schreberi* (?), (Schreber's Feather Moss). It may not be the species *Schreberi*, as the specimen is not fruit-bearing. Species is doubtful.

M. S. C.—I take the liberty of sending you the description of an insect which we have in our school-room. Last March, or first of April, a pupil brought me, on an alder twig, the cocoon of what is commonly called "American

silk worm." I do not know the scientific name. We put the twig on one of the windows and waited and watched until "hope deferred made the heart sick," and we forgot about it. On the 29th May one of the pupils discovered a strange insect which he called a "butterfly" under the end of a bench. We got him, her, or it, up on a plant. Its body is about an inch and three-fourths long, three-quarters broad at its widest part, body covered with brown and white velvet, is the only name I can give; legs, six, covered with what seems to be minute brown feathers, same covering on head, antennae haired like a moth, four grey wings, with red and white curves on them, also spots of the same; one pair of spots, has a dash of purple, wings measuring five inches from tip to tip. It stays in one place all day. We give him alder leaves to stay on. Every night he changes his place. The moth (for such I suppose it is) is still living and apparently "happy," as one of the boys said when he supplied the fresh leaves this morning. By naming the insect you would confer a favor.

Your insect is the EMPEROR MOTH (*Platysamia Cecropia*), described and figured in EDUCATIONAL REVIEW, Vol. I., No. 1. (Ferndale School, No. I.), June, 1887.

F. E. C.—Please explain example 4, review exercise V., page 104, Hall's arithmetic.

The only difficulty you probably found was in making your answer agree with that in the book. The correct answer is \$23.81½.

## BOOK REVIEWS.

ELEMENTS OF CHEMISTRY. (Briefer Course). Descriptive and Qualitative, by James H. Shephard, Professor of Chemistry, South Dakota Agricultural College, and chemist to the United States Experiment Station, South Dakota. Cloth, pp. viii+167, 5 by 7½ inches. D. C. Heath & Co., Publishers, 1891. This is a practical book, and one of the best for its size which we have yet seen for a good and brief introduction to the science. We hope the day is not distant when chemistry will be studied experimentally in all our high schools from the start. Course of lectures or theoretical chemistry could profitably follow a brief practical course of this kind.

PHYSICAL LABORATORY MANUAL AND NOTE BOOK, including more than 200 experiments and exercises, and especially adapted to accompany the author's text book on physics, by Alfred P. Gage, Ph. D., author of "Elements of Physics," "Introduction to Physical Science," "Physical Lectures," and "One Thousand Exercises in Physics," board pp. x+121 with 121 blank pages alternating for notes, 5 by 7 inches, \$0.45, Ginn & Company, Boston, 1891. Just what every high school student using Gage's Physics should have, work with, and fill out. Then we could be sure of a good foundation being laid for more advanced study and of the student's understanding and enjoying his work, and of his being able to put his knowledge into practical account when any occasion might require it. It implies the proper, that is, the experimental study of physics.

THE EDUCATION OF CHILDREN. A pamphlet containing reprints of articles from the *Popular Science Monthly* and *Mo-*

*Millan's Magazine.* Price 10 cents. Selby and Co., Toronto, Publishers.

**ON SELF-CULTURE.** By John Stuart Blackie, professor of Greek in the University of Edinburgh. New York and Chicago, E. L. Kellogg & Co. Cloth. 20 cents net; by mail, 23 cents. This little 64-page volume treats of intellectual, physical, and moral culture, and contains in small space a vast amount of excellent advice.

WE are indebted to Prof. Trelease of the Shaw School of Botany, St. Louis, for the volume recently issued containing his revision of the American species of *Epilobium*. Thirty-eight species are described, and illustrated by handsome plates. American botanists are much indebted to Prof. Trelease for his investigations during the past few years, in which he has added much to American botany.

**STUDIES IN NATURE AND LANGUAGE LESSONS**, based on the theory that experience and expression should go hand in hand. Arranged by T. Berry Smith, A. M., Fayette, Mo. Paper, price fifty-five cents. Publishers, D. C. Heath & Co., Boston. These lessons are invaluable aids to teachers who would lead pupils to observe carefully and then give expression to the knowledge so obtained.

**BUSINESS BOOK-KEEPING.** A manual of modern methods in recording business transactions. Common school edition—single entry, by George E. Gay, cloth, pp. viii + 93, 7 by 10 inches, \$1.10. Ginn & Company, Boston, 1891. This is a superior book and well fulfills the prediction of its title, "A Manual of Modern Methods." The typographical character of the work is fine, and the forms given are beautiful.

**RIDER PAPERS ON EUCLID**, (Books I & II), graduated and arranged in order of difficulty, with an introduction on teaching Euclid, by Rupert Deakin, M. A., Balliol College, Oxford, cloth, pp. 7 by 9, 46 inches, one shilling. MacMillan & Co., London and New York, 1891. Worth the money twice over to the geometrical teacher who wants a good collection of exercises.

**THE SPIRIT OF SCHOOL ADMINISTRATION**, by Hon. Andrew S. Draper, and **THE PUBLIC SCHOOL AND CIVIL SERVICE REFORM**, by Hon. Geo. William Curtis; two interesting pamphlets on education from the Department of Public Instruction, State.

**PRINCIPLES OF THE ALGEBRA OF LOGIC**, with examples, by Alexander MacFarlane, M.A., D.Sc. (Edin.), F. R. S. E. Read before the Royal Society of Edinburgh, 16th Dec. 1878 and 20th Jan. 1879. Cloth, 5 by 7½ inches, pp. x + 155. Edinburgh: David Douglas, 1879. A valuable and exceedingly interesting volume to the mathematical logician.

**PRIMER OF ETHICS**, by B. B. Comegys. Publishers, Ginn & Co., Boston. This little book presents the principles of moral conduct in a clear and simple manner. Some of the subjects treated are: truth, obedience, industry, honesty, fidelity, justice, politeness, duties at school, duties to play-mates, to dumb creatures, duty to God, purity, etc. Teachers should read this book.

**NOTES ON ENGLISH LITERATURE**, by Fred. Parker Emery, Inspector in English in the Massachusetts Institute of Technology. Cloth, price \$1.10. Publishers, Ginn & Co., Boston. The introduction, as a guide to those who are seeking how best to study English literature, is worth the price of the book. Only the best representative writers of each period are included in the book, with a few strong sentences regarding each, with many references.

**WORD BY WORD**, a spelling book for the use of grammar and common schools, by J. H. Stickney; price 30 cents. Publishers: Ginn & Co., Boston. Has some new and excellent points in teaching spelling.

**A SYSTEMATIC COURSE OF EXERCISES IN ENGLISH GRAMMAR**; published by the Copp, Clark Company (limited), Toronto, contains much that is helpful to teachers.

**PAINTING IN OIL**, a practical manual for the use of students. Square 12mo.; cloth. Price \$1.00. Robert Clarke & Co., publishers, Cincinnati, Ohio. A beautiful book, with a lucid statement of the scientific theories and facts relative to colors, treating the whole subject broadly as well as technically. The book has been written by M. Louise McLaughlin and is clear and direct in style.

**CÆSAR'S GALLIC WAR**, by Profs. C. M. Lowe and J. T. Ewing, handsomely bound in cloth with text printed separately for recitation, price \$1.25. Publishers, Albert, Scott & Co., Chicago, Ill. This edition, with its interesting sketch of the life of Cæsar, its maps, illustrations, annotations, grammatical references (at the foot of each page), the markings of all long syllables and other excellent features, is plainly the best before the public. The authors have evidently spared no pains to make it complete and thorough in every particular. To read Cæsar anew in this attractive form will give fresh delight, and will result undoubtedly in fresh acquisition to old students, while the new student with this book in hand will enter upon his work with many advantages over his predecessors. Both editors and publishers are to be congratulated on bringing out such an excellent work.

**THE MISSOURI BOTANICAL GARDEN**—its first annual report, 1890. One of the most remarkable men of the present century was Henry Shaw, founder of the Missouri botanical gardens and of the Shaw School of Botany. Born in England, he came to the United States, amassed a sufficient competence before he was forty years of age, retired from business and began to use his wealth in the development and supervision of a garden. Having spent a few years in travel and observation, he devoted the remainder of his life—thirty years—to transforming an estate of 276 acres into a garden, where more than 20,000 trees have been planted. This, with ample funds, was donated at his death to Washington University for the establishment and maintenance of a school of botany. For several years it has been under the direction of Dr. Henry Trelease, an accomplished and enthusiastic botanist, who is making it one of the first schools of America.

#### BOOKS RECEIVED.

LONGMAN'S FRENCH GRAMMAR—Longmans, Green & Co., London and New York.

FRENCH BY READING—Heath's Modern Language Series—D. C. Heath & Co., Boston.

**Current Periodicals.**

*The Popular Science Monthly* for June contains, among other articles, "The Development of American Industries since Columbus," "Questions Concerning Minor Planets," "The Characteristics of Insects," "Sketch of Copernicus" (with portrait); published by D. Appleton & Co., New York.... *Garden and Forest* (New York) has special articles every week on forestry and horticulture. Its editor, C. S. Sargent, is probably the best authority in America on our native trees. Its articles are all written by well known scholars and naturalists, are always popular and instructive.... The numbers of *The Living Age* for the weeks ending May 23rd and 30th, contain among other interesting articles, Talleyrand's *Memories, Nineteenth Century*; On Quiet Rivers in Ceylon and Grasse; Henry Schliemann and a Study of Nelson, *MacMillan's*; The Bard of Olney, *Temple Bar*; An April Folly, *Argosy*; The Bee and the Wasp, *Standard*; with the conclusion of "Eight Days" and poetry. For fifty-two numbers of sixty-four large pages each (or more than 3,300 pages a year) the subscription price (\$3) is low; while for \$10.50 the publishers offer to send any one of the American \$4.00 monthlies or weeklies with *The Living Age* for a year, both postpaid. Littell & Co., Boston, are the publishers.... Walter Blackburn Harte, whose article on the drift in Canadian political life toward annexation, which made such a stir when it appeared in the *Forum* in 1889, has a very timely article in the *New England Magazine* for July, called "A Brief for Continental Unity—A Consideration of the Sentimental Objections to Annexation."

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The staff of Instructors is larger than usual, and consists of the following:—

*Astronomy*—Principal Cameron, Yarmouth Academy.

*Botany*— { G. U. Hay, Ph. B., Principal of Victoria and Girls' High School, St. John.  
} assisted by Miss N. Forbes, B. A., Yarmouth Academy.

*Chemistry*—D. M. MacAdam, B. A., St. Francis Xavier College.

*Elocution*—Not yet selected.

*Geology*—A. McKay, Esq., Supervisor of Schools, Halifax.

*Microscopy*—A. H. MacKay, B. A., B. Sc., &c., Halifax Academy.

*Mineralogy*—A. J. Pineo, A. B., Pictou.

*Music (Tonic-Sol-Fa)*—Miss A. F. Ryan, St. Mary's School, Halifax.

*Physics*—E. McKay, B. A., Principal of New Glasgow High School.

*Physiology*—M. L. Angevin, M. D., Halifax.

*Psychology*—J. B. Hall, Ph. D., Normal School, Truro.

*Zoology*—Prof. Brittain, Normal School, Fredericton.

It will be seen that two new subjects are added to the course, viz.: Microscopy, by Principal A. H. MacKay, of the Halifax Academy, and Psychology, by Dr. Hall, of the Provincial Normal School, Truro. In original and practical scientific work Principal MacKay has few equals in Canada, and his class in Histology and Microscopy at the school will be one of very great interest. Dr. Hall has made a thorough study of the German Educational System during his recent sojourn in that country, and his lectures on Psychology, *in its relation to the work of Teaching*, which will be free to all enrolled students, cannot fail to interest all members of the Teaching Profession.

Teachers who can spend a couple of weeks in the beautiful town of Antigonish, with its picturesque surroundings, and in the company of genial wide-awake fellow workers, cannot fail to enjoy themselves; and while they add largely to their store of knowledge they will also gain many valuable hints as to the best methods of imparting it.

Any who have not received a copy of the programme of the work to be undertaken are requested to drop a card to the Secretary, who will send one by return mail. The

whole cost of travelling, board and class-fees will be from \$10 to \$20, according to the present location of the student. Arrangements have been made with the proprietor of the *Central Hotel* to accommodate a large number of those who attend the school (terms, \$3.50 per week), and in order to do so he finds it necessary to secure rooms in private residences. Persons, therefore, who wish to enjoy the hospitality of this leading hotel will drop a card to the local Secretary, Principal A. A. MacDonald, Antigonish, who will make satisfactory provision for them.

Arrangements are being completed with railway lines and steamboat companies for reduced rates of travel. Those going by the I. C. R. will pay a full first-class fare to Antigonish, but will be careful to get from the agent who sells the ticket a certificate to that effect. This certificate, when completed by the Secretary of the Science School, on being presented to the Station-master at Antigonish, will entitle the holder to a return ticket, good for one continuous return trip, *free*. Passengers by the W. & A. Railway will receive return tickets by paying one first-class fare and one-third.

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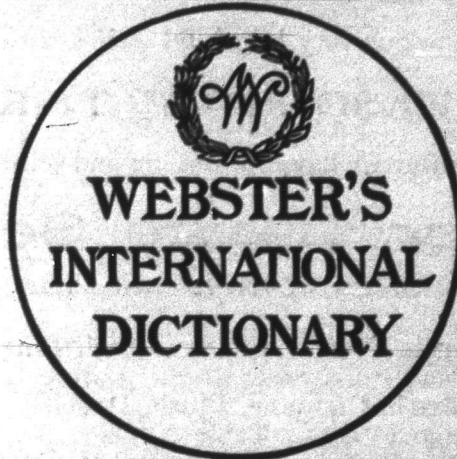
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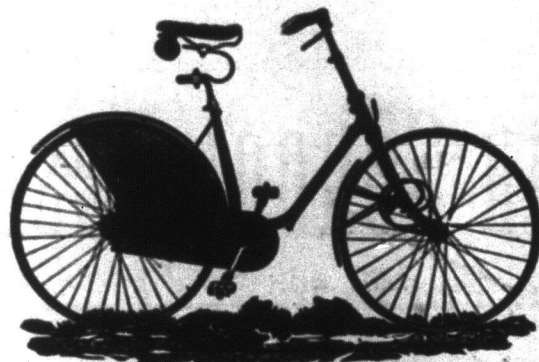
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The Authentic Webster's Unabridged Dictionary, comprising the issues of 1864, '79, and '84, still copyrighted, is now thoroughly Revised and enlarged, under the supervision of Noah Porter, D. D., LL. D., of Yale University, and as a distinguishing title, bears the name **WEBSTER'S International Dictionary.** Editorial work on this revision has been in active progress for over Ten Years, not less than One Hundred paid editorial laborers having been engaged upon it, and not less than \$300,000 having been expended before the first copy was printed. Critical comparison with any other Dictionary is invited.

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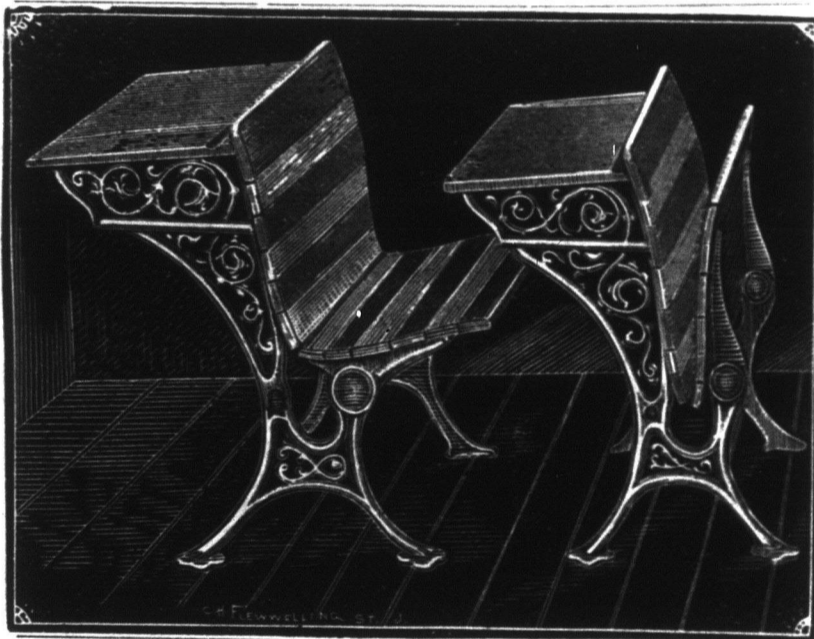
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